

**CLAIMS**

1. A light detection device comprising:

an optical fiber, having an end face that serves as a light exiting surface; and

5 a photoelectron emitting part, formed on the end face and emitting photoelectrons based on light exiting from the end face.

2. The light detection device according to Claim 1, wherein

10 the optical fiber includes a core part,

at least a part of the end face includes the core part, and

the photoelectron emitting part is formed only on the core part of the end face.

15 3. The light detection device according to Claim 1 or 2, wherein a diffraction grating for wavelength selection is formed in the core part.

20 4. The light detection device according to any of Claims 1 through 3, further comprising a light shielding cladding, disposed on the surface of the optical fiber in order to prevent leakage of light from the optical fiber.

25 5. The light detection device according to any of Claims 1 through 4, wherein the optical fiber includes another end face that serves as a light incidence surface and

the light detection device further comprises an optical fiber connector, which is mounted to the other end face.

6. The light detection device according to any  
5 of Claims 1 through 5, further comprising a cooling part for lowering the temperature of the photoelectron emitting part.

7. The light detection device according to any  
10 of Claims 1 through 6, wherein a metal layer is positioned between the end face and the photoelectron emitting part.